

Teaching Students with Moderate Disabilities to Read: Insights from Research



2004

Bureau of Instructional Support and Community Services
Florida Department of Education

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Teaching Students with Moderate Disabilities to Read: Insights from Research

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2004

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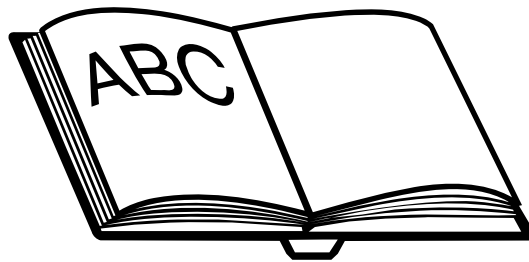
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What is this document about?

The purpose of this document is to provide current information about teaching reading to students with moderate disabilities. The term moderate disability refers to individuals with ability levels that are expected to require ongoing support for adult living. This typically includes students with disabilities such as trainable mental handicaps, autism, autism-spectrum disorders, and significant language impairments.

The document provides an overview of reading development and research on effective reading instruction and shows how the interaction between these two areas can influence reading instruction for students with moderate disabilities. A brief summary of what reading is, how it develops, and what we know about effective reading instruction provides the basis for discussing reading for students with moderate disabilities. This summary is followed by a condensed description of what we know about teaching reading to students with moderate disabilities from evidence in research. Suggestions are also provided for ways teachers can use that information in their classrooms. A sizeable resource section beginning on page 25 is included to provide ideas for obtaining additional information to improve reading instruction, as it emerges from research. Throughout the document, sections labeled as an “Info Box” are included to provide readers with background information to enhance understanding of the material in the book.



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Why do we need to think about reading for students with moderate disabilities?

Many people believe that individuals with moderate disabilities cannot learn how to read. They think that reading is too complicated and requires high levels of language and cognitive ability that individuals with moderate disabilities do not possess. However, research about reading has begun to provide evidence that students with moderate disabilities can be taught reading skills.

Why do we need to think about reading for students with moderate disabilities? To answer this question we need to consider two things. The first consideration is that reading is an important life skill. Reading is a critical skill for participation in all aspects of life, including school, work, and the community. It is a major key to accessing knowledge, gaining independence, and exercising life choices. The second consideration is that everyone in the State of Florida is putting a greater emphasis on reading, with the long-term goal to increase the reading proficiency of all students, including students with disabilities. This effort is in response to national and state policies that require the use of reading instruction that is aligned with the most recent research.

National Reading Initiatives

A body of research exists that provides strong evidence about the nature of effective instruction that can improve reading performance for students. The National Reading Panel (NRP), a group formed at the request of Congress and the Secretary of Education in 1998, was charged with reviewing the effectiveness of various approaches to teaching students to read. They were asked to describe the evidence from scientifically based reading research so that policy makers and educators could use that knowledge to determine “what works” and improve reading instruction. The panel identified five essential components of reading instruction for beginning readers:

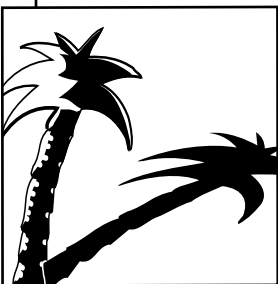
- 1 Phonemic Awareness**—the ability to hear, identify, and manipulate individual sounds (phonemes) in spoken words
- 2 Phonics**—the ability to understand and use relationships between letters of written language and the sounds of spoken language
- 3 Fluency**—the ability to read a text accurately, quickly, and with proper expression

- 4 Vocabulary**—the ability to use words to communicate effectively in speaking and listening (oral vocabulary) or to recognize or use in print (reading vocabulary)
- 5 Text Comprehension**—the ability to gain understanding and information from print.

Federal policy makers felt so strongly about the importance of research-based instructional approaches that they used the information from the National Reading Panel to design the No Child Left Behind (NCLB) legislation (Elementary and Secondary Education Act, 2001). The legislation requires that instruction be founded on scientifically based research to improve student performance.

The National Reading Panel report has been summarized for educators in a variety of sources, including *Put Reading First—The Research Building Blocks for Teaching Children to Read* published by the National Institute for Literacy. This publication provides a reader-friendly summary of the research with many examples of classroom applications. For more information on locating this document and other resources on reading research, see “Where can I get more information?” on page 25.

State Initiatives



Florida citizens and policy makers have been concerned about student reading performance for many years. Governor Jeb Bush established the Just Read, Florida! initiative in 2001 to target reading improvement statewide. This comprehensive initiative calls on educators, families, communities, and businesses to help improve reading skills for students in Florida.

Activities of the Just Read, Florida! initiative are designed to implement the National Reading Panel findings and are aligned with the No Child Left Behind legislation. In fact, Florida was one of the first states to receive a federal grant to implement the Reading First requirements of No Child Left Behind for students in kindergarten through grade three. All schools participating in Reading First must provide instruction and assessment in the five areas of reading instruction identified by the NRP. They must provide instruction that is differentiated to meet the learning needs of all students, including those who need more intensive intervention.

The expectations of No Child Left Behind apply to all students, particularly those at risk for reading failure or for low academic achievement. NCLB requires that students

be provided scientifically based teaching methods that have been proven to work as a means to ensure that all students will learn. Students with disabilities are part of the at-risk population and must also be provided scientifically based reading instruction.

Reading and Students with Moderate Disabilities

Research and case studies have shown that students with moderate disabilities can learn to read, although more commonly at a lower rate or proficiency level compared to typically developing peers. There is evidence that some students with moderate disabilities use phonic skills to sound out words and they can comprehend stories about events or topics that are familiar to them. Some have learned how to read words in their environment that allow them to function more independently, while others have become proficient enough to be able to read simple books, magazines, and newspapers.

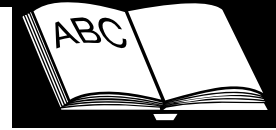
In spite of this evidence, surveys have revealed that many parents and teachers of students with moderate disabilities often have extremely low expectations for reading and literacy for these students. They simply don't expect that students with moderate disabilities can learn to read. Parents may not spend as much time reading to their child if they do not believe he or she can learn to read. Likewise, other surveys and observations have shown that only small amounts of instructional time are devoted to teaching reading to students with moderate disabilities. As a result, students with moderate disabilities generally enter school with less exposure to print at home and receive less classroom instruction than their peers receive. Teachers and families may place a greater emphasis on life skill goals, have insufficient knowledge about reading potential, or lack training in reading instruction, which are all possible explanations for these findings.

There are legislative requirements that influence the content of instruction that is selected for students with moderate disabilities. The No Child Left Behind legislation applies to all learners and requires reading instruction be provided using scientifically based research. A second federal law must be considered for students with disabilities. The Individuals with Disabilities Education Act (IDEA), the federal law governing programs for students with disabilities, requires that all students have access to the general education curriculum. Reading is a primary component of the general education curriculum. As a result, instruction in reading must be considered for students with moderate disabilities.

Given the importance of reading as a lifelong skill and the need to provide access to the general curriculum, it is important to include reading as an area of instruction for students with moderate disabilities. To make sure that these students can access the potential benefits of reading, they need to receive scientifically based reading instruction in order to reach their own reading potential.

There is limited research on how to best teach students with moderate disabilities to read. The current knowledge base for teaching reading focuses on typical and struggling readers. It is not yet clear if this knowledge translates directly to instruction for students with moderate disabilities. In the absence of clear direction about the exact sequence and methods for teaching these students, teachers must base their practices on the research related to teaching reading to all students. They must also monitor the emerging research on reading instruction for students with moderate disabilities. Teachers can use information from these two areas of research to make instructional decisions that will allow students with moderate disabilities to learn to read as proficiently as possible.

What do I need to know about reading?



The answer to this question focuses on four major topics. The first is a description of the *Simple View* of reading developed by Phil Gough that addresses two broad areas of skills that are necessary for reading. The *Simple View* provides the context for our discussions about reading. The second topic is a review of how these skills develop for typical readers. Once we understand how reading develops, it is important to consider the third topic, how to most effectively teach students as they progress through these developmental phases. This discussion targets essential areas of reading instruction that help students develop the type of skills needed for reading. The targeted areas are considered essential because they are identified from scientific research on reading. The fourth topic is how this knowledge base relates to developing reading instruction for students with moderate disabilities.

The *Simple View* of Reading

The best measure of a student's success in learning to read is the ability to comprehend, or understand, what he or she reads. The *Simple View* of reading, which is widely supported in current research, is that reading comprehension depends on two broad sets of skills. The first group of skills contribute to the ability to accurately and fluently identify the words in text. This is referred to as word reading ability.

The second set of skills in the *Simple View* involves all of the knowledge and skills that are required for comprehending language. Comprehending the meaning of written language is heavily dependent on the student's general verbal or language comprehension skills. In other words, understanding written language requires many of the same kind of skills and knowledge as is required to comprehend oral language. The main difference is that in reading, the student must also be able to accurately identify words in print.

If a student cannot accurately identify, or decode, most of the words in a passage of text, it will be very difficult to comprehend the meaning of the passage. Likewise, if a student can read the text accurately, but doesn't know the meaning of many of the words or cannot comprehend the concepts expressed, then reading comprehension will suffer. In short, the *Simple View* of reading states that students use word recognition skills to identify written words while at the same time they are using their general verbal knowledge and language comprehension abilities to construct the meaning of what they are reading.

Of course, comprehending written material is not exactly like comprehending oral language. For one thing, in oral language comprehension, the listener cannot easily

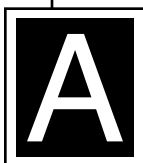
skip back to previous material to correct a misunderstanding. For another, the reader can adjust the pace of reading to allow for more difficult material, and that is not always possible when listening to oral language. There are a number of strategies that readers can use to improve their comprehension that are not available to listeners. However, the fact remains that most of the language skills that contribute to reading comprehension are also required when comprehending oral language. Therefore, the *Simple View* of reading is that successful reading is based on the ability to decode or read words as well as the ability to comprehend language.

Typical Reading Development

The ability to read generally develops in a predictable way for most individuals. This section provides a brief overview of typical reading development as a reminder to readers about how students progress through the reading process. It will help us understand the steps in the progression to effective reading and provide a foundation for identifying similarities and differences in learning patterns for students with moderate disabilities. The discussion is organized around three stages: *pre-reading*, *learning to read*, and *reading to learn*. The overview draws on models of reading development by Jeanne Chall, Linnea Ehri, Louise Spear-Swerling, and Robert J. Sternberg. Teachers who want more details on these models can use the references for these authors beginning on page 33 as a source for more information.

It is important to remember that the stages of reading development are not discrete, self-contained entities; the transition between stages is often very gradual, and the student may be at one stage for certain types of material while functioning at another stage for material at a different level of difficulty. With that said, we can discuss three general stages of reading development. They are the *pre-reading stage* in which students are developing language skills and awareness, the *learning to read* stage that focuses on building skills to read words, and the *reading to learn* stage when students are expanding their reading vocabulary and comprehension skills. The stages represent phases of progression through the reading development process, but they are not meant to suggest that instruction should focus on only one set of skills during each stage. For example, language development to build vocabulary and general knowledge is important throughout each phase. In addition, even after students enter the *reading to learn* phase, they continue to acquire knowledge about words that help them become more accurate and fluent readers. Further, comprehension is the goal of reading at all levels, even though the *learning to read* stage emphasizes developing decoding skills.

Pre-Reading Stage



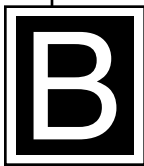
Language development is the primary focus for students in this stage. As students develop expressive language that allows them to communicate their thoughts and receptive language that allows them to understand what they hear, they

are acquiring the vocabulary and verbal thinking skills that are essential for reading comprehension. During this period, they also begin to be aware that print represents spoken words, and they may begin to acquire some initial familiarity with letters. Students often learn to recite the alphabet during this phase. Given the right learning opportunities, students in the pre-reading phase may also begin to acquire some initial awareness of the phonological structure of words (i.e., that words can be divided into parts or that they can have the same beginning or ending sounds). They may also learn to recognize some very familiar words by sight. For example, familiar signs and words are recognized (e.g., the word “stop” as it occurs in stop signs, the word “McDonald’s” associated with the golden arches, the word “look” because it has two “eyes” in the middle) by their distinctive visual appearance and the context in which they typically occur. Students use memorization as the method to learn to recognize these words, and they are not yet actively using the regular relationships between letters and sounds in their reading. This is an important point, because it would be extremely difficult for anyone to learn enough words through memorization to become a fluent reader at even the third-grade level. Students in the pre-reading stage also begin to pretend to read and develop basic concepts about print (holding the book upright, pointing to words as they tell the story, left to right orientation).

Learning to Read Words

At the beginning of this stage, students shift from using arbitrary distinctive visual features to recognize words (e.g., a word’s shape, or its length, or the “tail” on the last letter in the word “dog”) to using the relationships between letters and sounds in words as their main clue to a word’s identity. It is during this stage that students master the alphabetic principle so that they can reliably use the correspondences between letters and sounds in words as an aid to accurately guessing the identity of words they have never seen before in print.

At the beginning of this stage, students may only sound out a few of the letters



in a word before they try to guess what it is, and they often will make mistakes. As students become more skilled at using phonics, letter-sound relationships, to decode new words, they accurately sound out more of the phonemes in words (particularly the vowels), and they become more accurate readers. At the same time they are learning to use letter-sound

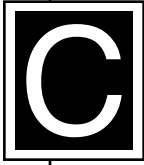
cues to help them read novel words, students are also learning that another important clue to the identity of new words comes from the meaning of what they are reading. Their task in learning to read new words is to gather as much information as they can from their knowledge of letter-sound relationships, and then combine that with their sense of the meaning of the passage, to find a word that matches the sounds they have decoded and also makes sense in the context of what they are reading. In fact, scientists who study the reading process have

suggested that teachers should encourage students to first sound out words as much as they can, and then think of a word that has those sounds in it that also fits the meaning of what they are reading. Once students learn to do this consistently, they are on their way to becoming accurate and fluent readers.

As students practice using their phonics and contextual skills to identify the unknown words they encounter in text, they gradually learn to recognize more and more words by sight. Scientists tell us that students form memory representations for words after they have identified them correctly in print several times. These representations are created quickly in most students because they are able to use their awareness of the sounds in words to help them remember their spellings. Students who have not developed good phonics skills will have more difficulty learning to recognize words at a single glance. As this phase continues, students also become familiar with common letter sequences like “ing,” “at,” or “un” that help them decode words in larger chunks.

The real key to the successful conclusion of the *learning to read* phase is to acquire powerful phonemic decoding skills while at the same time building a large vocabulary of words that can be recognized by sight. In fact, it is the latter accomplishment that is the key to fluent reading. As students learn to recognize more and more words at a single glance, they become more and more fluent readers.

It is important to note that, if our goal is to have students read accurately and fluently above a first- or second-grade developmental level, it will be very difficult to directly teach them to instantly recognize all the words they will need to know. There are simply too many different words to learn. That is why it is important for students to develop skill and confidence in being able to “attack” words they have never seen before in print using a combination of phonemic analysis and contextual skills. If they rely on context alone to identify new words, they will make too many mistakes, and will not be able to build the memory representations for words that are the basis for fluent reading. If they do not learn to use phonemic analysis as they encounter new words, they also will not be able to use their awareness of the sounds in words to help them remember word spellings, and their memories for words will be weak. Thus, the key to becoming a fluent and accurate reader at the third- or fourth-grade level is to acquire good alphabetic reading skills (phonics), and then practice using those skills with lots of reading. As students acquire a larger and larger vocabulary of words they can recognize by sight, this paves the way for students’ attention to shift from laboring to identify words to getting information from what they read.

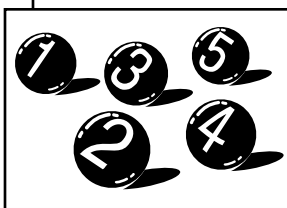


Reading to Learn

Throughout the *learning to read* phase, teachers need to help students expand their vocabulary and language comprehension skills. During the *reading to learn* phase, students continue to expand their background knowledge and vocabulary while they increase the capacity to quickly identify words. They begin to read to gain new information from a wide variety of reading materials and topics. Students spend time thinking about what they read while they are reading. They are just beginning to develop reading comprehension strategies. These strategies allow them to identify facts, descriptions of concepts, or different viewpoints in what they are reading.

In the middle of this stage, students link information and use strategies that apply their own vocabulary and prior knowledge to analyzing text and reading critically. Students begin to apply their strategies to gain meaning from multiple viewpoints and analyze more complex texts to identify layers of facts and concepts. Strategies expand to build toward proficiency in analyzing text and critical reading.

The *reading to learn* stage actually never ends, because students' vocabulary and background knowledge become continually more sophisticated. They are able to use what they read to formulate their own ideas and construct their own judgments about how the information applies to their own ideas. Students are able to decide if what they read provides adequate information for their purpose and identify when they need to locate additional sources of information. Just as students were developing comprehension skills as they were learning to read, students continue to use decoding skills from the previous stage when the situation requires it (such as decoding technical words or foreign language terms.)



The National Reading Panel Five Areas of Reading Instruction

We have discussed the two areas of broad skills – word reading and comprehension – that constitute successful reading. We have also reviewed how students typically progress through the stages of reading development. Next, we will think about the areas that are critical to effective reading instruction.

The research review conducted by the National Reading Panel revealed five areas that must be addressed to provide effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and text comprehension. It is important to understand the roles these areas of instruction play as students build reading skills. These roles were explained in the previous section on typical reading development. This section provides further discussion of how instruction can be used to develop reading skills. Specific

information about the scientifically based research and instruction for each area can be located in “Where can I get more information?” on page 25.



Phonemic awareness is the ability to recognize and work with individual sounds, or phonemes, in spoken words. This ability is critical to helping students make the connections between phonemes in words and the letters that represent the sounds in written words. Students who do not have this ability will struggle with learning to read and spell. The good news is that students can be taught to develop their phonemic awareness skills through systematic, explicit instruction. Phonemic awareness is most closely associated with the *pre-reading* stage of reading development, although it can extend into the *learning to read* stage, if needed. At a beginning stage of development in phonemic awareness, students can learn to judge whether two words rhyme. Later, they will be able to tell which of several words begins with the same sound as a target word. More complete development of phonemic awareness is shown when students can pronounce all the separate sounds in a word like “cat” /c/ /a/ /t/ or “first” /f/ /ir/ /s/ /t/.



Phonics instruction helps students understand and learn the regular relationships between spoken sounds and letters in words. It builds the bridge between letters in written language and the individual sounds in spoken language. Once students are aware of sounds in spoken language, they can use phonics to decipher and write new words. Phonics knowledge gives students a tool to decode words that they have not learned to read by sight. Just as with phonemic awareness, phonics instruction should be systematic and explicit. Phonics instruction is a major part of the *learning to read* stage. Students will use phonics knowledge throughout the reading process as they encounter words that are not automatically recognized.



Fluency instruction and practice helps students to develop skills to read text accurately and quickly. Although being able to recognize most words at a single glance is very important for fluency, fluency goes beyond just recognizing individual words. Students are fluent when they are able to read text smoothly, accurately, and with expression. In order to read with expression, students must comprehend the meaning of what they are reading. Thus, when we say that a student is a fluent reader, we mean that he or she can read text at the appropriate grade level, at the proper rate, and with good comprehension. Once students have acquired the skills to read accurately, fluency develops most directly through extended practice in reading. The development of fluency is emphasized at the *learning to read* stage, but fluency with increasingly difficult material continues to develop long after entering the *reading to learn* stage.



Vocabulary instruction focuses on building knowledge of what words mean. Students use this knowledge to make sense of the words they hear in language or read in text. When students are confronted with written words that are not part of their oral vocabulary, they must learn the meaning of the words before the text will make sense to them. Students learn most of their vocabulary indirectly through their daily experiences. Some vocabulary should be taught directly, such as the meanings for specific words or strategies to learn new words. Vocabulary instruction should be a part of reading instruction from the very beginning, and this is likely to be particularly true for students with moderate disabilities. In fact, for students with limited oral language skills, a lack of understanding of the meaning of words is likely to be one of the major factors that will limit their ability to comprehend written material. Remember, students will be able to comprehend written material at no higher level than they can comprehend oral language. Thus, enhancement of language skills is an important part of reading instruction for all students.



Text comprehension instruction gives students skills that allow them to make sense of what they read. Good readers have a reason for reading: they want information, pleasure, or to meet a personal goal. They also think about what they are reading as they read. While reading, they may adjust reading speed if the text is unfamiliar, think about their previous knowledge and try to link it to the new information, or check facts that are not clear as they read. Once students are able to gain meaning from recognized words, they begin to build comprehension skills. Reading comprehension can be improved through explicitly teaching students strategies and how to use the strategies. As with vocabulary, comprehension instruction should occur from the beginning of reading instruction. For students who have not yet learned to read words accurately, comprehension skills can be taught through oral language activities. Once students have mastered basic comprehension and word reading skills, then attention shifts during the *reading to learn* stage to even more complex comprehension and text study strategies.

Evidence about the Impact of Reading Instruction for Students with Moderate Disabilities

Three major pieces of information have been reviewed – the *Simple View* of successful reading, how reading typically develops, and a summary of the areas of research-based reading instruction. The information leads to an understanding of what reading is, how it develops, and the essential components of how it should be taught. The next step is to review how that information can be used to design reading instruction for students with moderate disabilities.

Teachers need to know and be able to use the most effective (to get the best results) and efficient (with the least effort) reading instruction techniques. From what we

understand about reading development, it is clear that instructional emphasis on vocabulary and verbal comprehension skills can support reading achievement. We also know that students require intensive instruction designed to match individual learning progression and rate to master most skills and concepts. Knowing how students with moderate disabilities approach the reading processes of word recognition and comprehension will give teachers better guidance about how quickly students can learn, how the instructional sequence and practice should be designed, and how to help students achieve higher levels of proficiency.

The idea that reading comprehension is heavily dependent on general language comprehension suggests a critical issue in thinking about appropriate goals for reading instruction with students who have moderate disabilities. While there seems little question that well-focused and sustained instruction in reading can help these students acquire basic reading skills, we must recognize that their ultimate ability to comprehend written material will be determined by their general language comprehension skills. It is important to move the students to the reading level that gives them the most independence based on their language capabilities. So, in addition to working to build their word-level skills (those involved in identifying printed words), we must also do all we can to stimulate the growth of their vocabulary and verbal comprehension skills.

The research evidence we have about effective reading instruction for typically developing students can be useful, even though the studies did not include students with moderate disabilities. These strategies for effective reading instruction may be an effective way to work with students with moderate disabilities. However, we do not yet know exactly which variations in the development process or instructional techniques (e.g., strategies for initial presentation and modeling, the amount of extra practice, the type of review techniques) will lead to stronger reading skills for students with moderate disabilities. Since the phases of reading instruction are not linked to any particular age or grade, teachers of students with moderate disabilities should match their students' ability to the corresponding reading development phase and proceed with reading instruction appropriate for that stage.



INFO BOX**Decisions about Research**

In order to meet accountability demands and improve student learning, the findings of research must be translated into practices that are applicable in the classroom. Research can provide guidance to teachers to design instruction that will produce specific student outcomes.

Educational researchers follow certain sets of procedures and guidelines to conduct research. For example, the number of individuals included in the study must be large enough so that the results can be generalized, or applied to other groups of similar individuals. Case studies or research with very small numbers of individuals can provide initial evidence, but these results may not be generalized with confidence. Another example of an established research procedure is when the researcher compares the outcomes of a group of students who used the instructional program (experimental or treatment group) with a group of students who used a different program (control group) to measure the effectiveness of a certain intervention or instructional program. The guidelines for research procedures help ensure we can be confident about the results.

Only recently have the guidelines for educational research been translated to make it easier to evaluate research findings and know how to apply the findings to daily instruction. The simple evaluation system used in this document to communicate evidence about research findings consolidates information from a variety of research evaluation systems. It is divided into categories to provide information about the quantity and nature of the research. It is designed to provide a quick reference to help teachers feel confident that the research evidence will translate to their classroom. The categories in the evaluation system are described below.

Strong – Several studies exist with adequate sample size and use of treatment and control groups to generalize to the targeted population.

Promising – At least one study exists with an adequate sample size and use of treatment and control groups to generalize to the targeted population.

Beginning – One or more studies exist with small numbers of students or that did not use treatment and control groups.

Strong



Promising



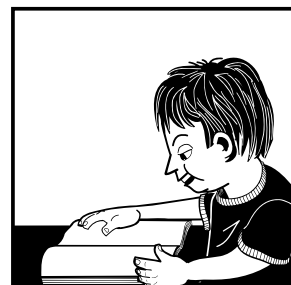
Beginning



What do we know about teaching reading to students with moderate disabilities?

There is an emerging body of research and information about teaching reading to students with moderate disabilities. We also know much about their learning characteristics and effective general instructional techniques. For instance, we know that students with moderate disabilities typically need extended time, practice, and applications in context to master skills. They may benefit from assistive technology and augmentative communication devices for learning and this may apply to reading instruction. It is also common that students with moderate disabilities experience significant delays in oral language and comprehension development. To make the best judgments about reading instruction, we must use what we know about teaching reading and pair it with what we know about effective instruction for these learners.

There is research evidence that provides guidance about the nature of reading instruction for students with moderate disabilities. The information that follows provides a summary of this evidence. It is organized in three sections based upon the broad stages of reading development described previously. Within each section is a summary of the findings in the research studies that were reviewed. The summary statements are intended to reflect the core finding from the studies. Summary statements are coded using the categories described in the “Info Box: Decisions about Research” on page 15. Remember that the summary statement is not a reflection of the design and results of a single study; rather it is a description of the evidence that is available from the studies reviewed. All information below describes evidence from studies that included or were specifically designed to investigate reading characteristics of students with moderate disabilities and techniques for effective reading instruction. A list of studies reviewed for each item is provided in the “References by Topic” section beginning on page 45.



Pre-Reading

The information in this section applies to the *pre-reading* stage when students are working on language development, becoming aware of sounds in words and developing concepts about print. It provides information that is useful to teachers as they plan to prepare students with moderate disabilities for getting ready to read.



Structured comments. Parents and teachers can provide structured comments when reading with a student that will help the student get ready to read. The types of comments include descriptions of what is on the page and observations about what might happen next in the story. One of the real benefits of shared reading between adults and students is the opportunity it can provide for students to expand their language usage. Thus, adults should not do all the talking in these situations. See item 2 in “What Should Teachers Do?” on page 21 for an example of how to effectively structure comments when reading.



Interactive technology. The use of interactive technology that highlights words on the screen as the story is read aloud increases the understanding of the concepts of print that are necessary to move into the *learning to read* stage.



Oral vocabulary. Oral vocabulary development of students with moderate disabilities at the *pre-reading* stage links to future reading vocabulary and comprehension. Students who have more advanced oral vocabulary are able to read with a higher level of comprehension. This evidence is from studies focused on students capable of oral communication.

Learning to Read

The *learning to read* stage is when students are learning to accurately and fluently identify words in text. They are developing decoding skills and building the capacity to recognize a large number of words with ease and expression. Recent studies address how students with moderate disabilities develop and learn word reading skills. Information about specific techniques for reading achievement for this group of students is provided below.



Direct instruction. Direct instruction is a systematic instructional method that includes step-by-step instruction and varied amounts of practice based on assessment of student performance that leads to student mastery of concepts and skills. There is evidence that these methods are effective when used for teaching students with moderate disabilities to decode and build comprehension skills. The direct instruction method is also referred to as explicit instruction.



Sight word instruction. Most of the research on reading that focuses on students with moderate disabilities investigates learning individual sight words. However, the National Reading Panel reading research findings do not support teaching individual words alone. There are simply too many words to learn if they must be taught individually, one by one. We should recognize from the beginning that such a strategy would not enable students to become independent readers. However, if students have severely limited general ability and do not respond to comprehensive reading instruction, it may be most efficient to teach them a limited sight vocabulary of functional words to help them negotiate their environment. Students can learn sight words using a variety of strategies such as time delay techniques, drill with words on flash cards, and practicing with peers.



Word recognition instruction. Students with moderate disabilities profit from instruction in word recognition components such as phonics and fluency. The studies that showed these results typically measured student performance after participating in a comprehensive reading program. They did not investigate the impact of instruction in individual areas alone, such as phonics and fluency.



Instructional procedures. Students with moderate disabilities can be taught to use step-by-step procedures to prompt them to apply their knowledge of phonemic awareness. They can also be taught to use step-by-step procedures to model and practice phonics skills. While the students can learn the steps in the procedures, more information is needed before we know if students can use the procedures independently with new words.



Word study techniques. Students with moderate disabilities may benefit from instruction in a word study technique called “word sorts.” This technique teaches students to categorize words based upon sound and spelling patterns and addresses the relationship between sounds and printed words and beginning phonics skills.



Graphic presentation of words. Students with moderate disabilities perform better on sound and word recognition tasks when presented with the letter or word alone. The pairing of words with picture cues related to meaning or shape of individual letters or words is often used as an instructional strategy for students with moderate disabilities. However, this finding would suggest that the picture cues do not improve student performance.



Computer-assisted instruction. Computer-assisted instruction and practice activities paired with regular classroom reading instruction produced good results in increasing phonemic awareness. The study was conducted with students with autism.



Peer tutoring. Class-wide peer tutoring can be used to improve reading fluency. Results indicated an increased rate of words read correctly. The study was conducted with students with autism.



Reading rate. Students with moderate disabilities read slower than typically developing peers did when passages were less meaningful. However, one study showed that reading rate did not appear to negatively influence comprehension of the sentences read by students with moderate disabilities.

Reading to Learn

Gaining understanding from the written word is what reading is all about. Readers must have the vocabulary knowledge to understand the meaning of words and comprehend the information in the passage. The following information provides a summary of findings from studies with students with moderate disabilities that investigated the skills that are part of the *reading to learn* stage of reading development.



Reading vocabulary. Several studies indicated that the reading vocabulary of students with moderate disabilities increased as a result of instruction in a comprehensive reading program.



Making inferences. Students with moderate disabilities were able to make inferences from narrative (story) reading passages with the same quality and quantity as typically developing students on the same reading level. The findings were different for expository (nonfiction) reading passages. Students with moderate disabilities generated the same quantity of inferences as the typically developing students, but the inferences were less plausible for this type of reading passage and may reflect a lack of comprehension.



Main ideas. Students with moderate disabilities were able to distinguish the ideas most and least important in a reading passage, but were less able to distinguish ideas with a medium level of importance when compared to typically developing peers.



Fact recall and cause-effect. Both typically developing peers and students with moderate disabilities could recall facts and make cause-effect statements better when the story had a direct path of events and details leading from start to finish of the story.



Peer tutoring. Comprehension scores of students with moderate disabilities were higher when they were involved in peer tutoring compared to regular instruction alone.

What should teachers do?



1. Make sure students with moderate disabilities have the opportunity to learn how to read.

- Have high expectations and consider the possibility that students with moderate disabilities can acquire reading skills when provided well-focused and sustained instruction.

Research evidence has shown that some students with moderate disabilities have increased reading skills when they receive instruction in comprehensive reading programs. Comprehensive reading programs are those that address the five areas of reading instruction and provide teacher tools to adjust instruction to student need. The reading programs adopted by Florida's instructional materials selection process are comprehensive reading programs. To find out more about these programs, visit the Florida Department of Education website (www.firn.edu/doe/instrmat/gradeK5.htm).

- Increase the amount of time provided for reading instruction.
- Emphasize instruction that will stimulate the growth of student vocabulary and verbal comprehension skills.
- Provide students with reading instruction that will build reading skills and develop comprehension that corresponds to their general language comprehension skills. Work with parents to coordinate practice time to stimulate oral vocabulary and comprehension as well as provide guided practice to develop reading skills.
- Include reading instruction and data about student reading performance in individual educational plan (IEP) team discussions and goal-setting.





2. Emphasize development of general language skills in the classroom and at home, especially at the *pre-reading* stage.

- Create a dialogue with the student about the pictures and stories in picture books that requires the use of different vocabulary words or construction of sentences.

The adult asks questions and encourages the student to expand on the answer. When students have beginning language, questions focus on items pictured on the page. Questions might ask about identity (What is it?), color (What color is that one?), or action (What is the duck doing?). As students develop better language skills, the questions can focus on sequences or relationships in the story (Why is the mother happy?) or about a link between the student's personal experience and the story (Do we have something like that to ride on?). The adult can then model language by expanding the student's statements (e.g., the student says "duck swimming," and the adult would reply "Yes, the duck is swimming.")



3. Provide specific training to build sensitivity to sounds and how to put sounds together to make words.

- Use activities to train students to recognize and identify sounds and to put sounds together to make words. Sensitivity to the phonological elements in words develops gradually during the preschool and kindergarten years, and may develop much more slowly in children with moderate disabilities. Children first become aware of individual words in sentences, then syllables within words, and finally they acquire awareness of the individual phonemes in words.

Clapping the words in sentences—Say a sentence, and then show children how they can clap for each separate word in the sentence. If children have difficulty, say the words in the sentence slowly.

Clapping the syllables in words—Syllables are relatively easy for children to identify in words with up to three syllables. Show them how to clap for each syllable by modeling and slowing down the pronunciation of the word.

Rhyming games—Rhyming games are useful activities to help children begin to pay attention to the internal phonological structure of words. It will be easier for children to indicate whether two words rhyme than it will be for them to generate rhyming words.

Matching pictures to sounds—A variety of games can be played with picture cards showing words that begin with different sounds. If children have trouble "hearing" the first sound in words, the teacher should segment the sound and elongate its pronunciation (e.g., /mmmm/ /a/ /t/, /mmmm/ /o/ /p/).

Finding objects—Use picture books for this activity, or have children search the room for objects that begin with a sound that the teacher specifies.

- Encourage students who are just becoming aware of sounds and words to imitate adults using print and talk about what they are doing.

Encourage students to pretend to read a familiar story book and talk about the story.

Provide opportunities for students to pretend to write their name or letters to their parents or friends. Discuss what they are “writing.”

4. Use best knowledge and research to plan your instructional approach.

- Organize instruction based upon the effective instructional practices for reading. The reading research for typically developing students provides a good framework for developing reading skills.
- Use instructional methods that support student progress in developing reading skills.

Use direct instruction to teach the steps in a skill; use many examples to illustrate a skill or concept; provide guided practice before moving to independent practice.

- Keep a daily or weekly record of student progress in reading skills. Use this information to document student growth, adjust instruction and decide when to move to the next skill or try a new instructional technique, and plan long-range strategies for reading instruction.
- Use classroom assessment and formal reading assessments to measure student progress.

Classroom assessment—The student reads aloud a passage from his or her book for one minute. The teacher notes the words that are read accurately and the number of words read and compares the results to the student’s previous performance.

Formal assessments—Dynamic Indicator of Basic Early Literacy Skills (DIBELS), a standardized curriculum-based measure, is an example of a formal assessment that can be used to track progress in reading skills. The decision to use a formal assessment such as DIBELS should be made on an individual student basis dependent on the student’s performance level and how the test was standardized.

- Integrate opportunities for students to practice reading throughout the day.
- Expand and structure reading practice using peer tutoring and computer-assisted instruction for specific reading skills.

- Teach procedures to provide support when students need prompts during learning.

Step-by-step procedure—To help students remember how to use phonics to identify unrecognized words, the teacher teaches the steps in applying phonics rules, such as 1. Look at the word, 2. Say the sound for each letter, 3. Put the sounds together, 4. Say the word. These steps may be posted around the room, taped to student desks, and used orally to remind students to use phonics knowledge.

- Use graphic organizers as advance organizers, note-taking guides, or story review tools to provide needed structure.

Note-taking guide for comprehension of a story—Students use a form divided into sections such as (1) main character, (2) main character's problem, (3) important events, and (4) how the problem was solved to record information as they read the story.

5. Keep up-to-date on current research.

- Learn about the National Reading Panel reading components and increase or update skills in teaching reading.



- Be informed and seek new information about effective reading instruction for students with moderate disabilities as it emerges. Much of what is currently known is based on a few studies. As additional studies are conducted, the conclusions may shift.

INFO BOX

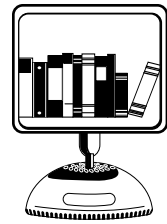
Reading for Students with Moderate Disabilities—Summary of Current Knowledge

- *There are many research studies and individual accounts that show that students with moderate disabilities can learn reading skills, although generally with less fluency and comprehension than typically developing peers achieve.*
- *Reading comprehension ability is directly related to oral language comprehension level.*
- *Reading consists of two types of broad skills: word reading and print comprehension.*
- *The five essential components of effective reading instruction are phonological awareness, phonics, fluency, vocabulary, and comprehension.*
- *The stages of reading development provide a framework for understanding the progression of learning to read proficiently and where students are performing within that progression.*
- *The research specifically related to effective reading instruction for students with moderate disabilities is emerging. Initial evidence suggests the following:*
 - *Explicit instruction has the best results.*
 - *Structured cues and supports are helpful to students as they master reading skills.*
 - *Peer tutoring and computer-assisted instruction (matched to the skill) are effective strategies for practice.*
 - *Direct instruction and practice to help students recognize high-frequency, high-utility words can be helpful in establishing minimal functional reading skills. However, students will not become independent readers unless they have acquired some ability to identify unknown words in text using phonemic analysis and clues from context.*

Where can I get more information?

Reading Instruction

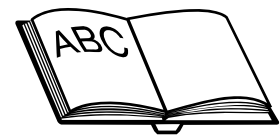
Put Reading First, The Research Building Blocks for Teaching Children to Read. This document was published by the Center for the Improvement of Early Reading Achievement in September 2001. Copies are available from the National Institute for Literacy at ED Pubs, P.O. Box 1398, Jessup, MD 20794-1398; telephone 1-800-228-8813. The document may be downloaded at **www.nifl.gov**.



Teaching Reading Is Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do. This document was published by the American Federation of Teachers in 1999. Copies are available for \$5.00 each from AFT Order Department, 555 New Jersey Avenue, NW, Washington, DC 20001. The document may be downloaded at **www.aft.org/edissues/rocketscience.htm**.

What Every Teacher Should Know about Phonological Awareness. This document was authored by Joe Torgesen and Patricia Mathis and published by the Florida Department of Education. Copies are available free of charge to Florida residents and may be ordered by mail at Clearinghouse Information Center, Room 628, Turlington Building, 325 W. Gaines Street, Tallahassee, Florida 32399-0400; telephone 850-245-0477. Request item number 9870. The document may be downloaded at **www.myfloridaeducation.com/commhome**.

How Should Reading Be Taught? This article is authored by Keith Rayner, Barbara R. Foorman, Charles A. Perfetti, David Pesetsky, and Mark S. Seidenberg and was published in the March 2002 issue of *Scientific American*. Information on how to obtain a copy is available at **www.sciam.com**.



Bringing Words to Life: Robust Vocabulary Instruction. This book is authored by I. L. Beck, M. G. McKeown, and L. Kucan and published by Guildford Press in 2002. It is an excellent, short book on building vocabulary to help reading comprehension.

Florida Center for Reading Research (FCRR)

The FCRR was established to produce and disseminate knowledge about reading by conducting applied and basic research. The Center also assists with implementing Florida reading initiatives such as Just Read, Florida! and Florida's plan to implement the Reading First grants associated with the No Child Left Behind Act. The website provides information about all the FCRR activities and links to important state and federal reading initiatives and information. The website is **www.fcrr.org**.



Just Read, Florida!

This website describes activities and resources for educators, families, and communities in Florida. The website is **www.justreadflorida.com**.



FLaRE

FLaRE provides information about literacy instruction and assessment. It is coordinated with other Florida literacy initiatives and is primarily focused on staff development and training for Florida's teachers and administrators in the area of reading. The website is **ucfed.ucf.edu/flare/indexhome.htm**.

National Reading Panel (NRP)

The National Reading Panel conducted an analysis of research on reading instruction and wrote a report to disseminate the findings. The National Reading Panel Report and summaries provide a thorough discussion of research-based reading practices. The NRP documents are available on-line at **www.nationalreadingpanel.org**.

National Institute for Literacy (NIFL)

The NIFL receives federal funding to provide information about developing essential literacy skills. The NIFL coordinates with the U.S. Department of Education and the Department of Child Health and Human Development to provide up to date information regarding high-quality literacy services. The website provides links to key reading research websites and documents that provide information about reading. The website is **www.nifl.gov**.



Partnership for Reading

The partnership is a collaborative effort between the National Institute for Literacy, the U.S. Department of Education, and the Department of Child Health and Human Development. The purpose of the partnership is to disseminate research about education practices. The partnership website provides summaries of research, links to key reading websites, and a searchable database of research studies used in the National Reading Panel review. The partnership will facilitate the updating of information as new research results are available. The website is **www.nifl.gov/partnershipforreading/index.html**.

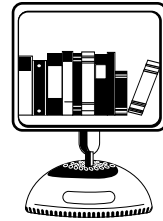


Institute for the Development of Educational Achievement

This federally funded project provides a variety of information on effective reading instruction. This includes detailed information to help understand, provide instruction, and assess the areas of effective reading instruction (referred to as Big Ideas). The information included in BIG IDEAS in Beginning Reading is thorough and easy to use. The website is **readinguoregon.edu**.

The Center for Literacy and Disabilities Studies

This center addresses the literacy learning needs of persons with disabilities of all ages. It concentrates most of its resources on individuals with severe and multiple disabilities. The goals include improving literacy by developing effective research-based strategies and instructional tools, providing preservice and inservice education to families and professionals, conducting research and development projects to increase the knowledge base about literacy and disabilities, and supporting policy development to increase literacy learning opportunities for persons with disabilities. The website is **www.med.unc.edu/ahs/clds**.



Center for the Improvement of Early Reading (CIERA)

This federally funded center is a consortium of educators from universities, publishers, professional organizations, and school districts. The website provides research-based information for teachers in the form of technical reports, presentations, publications, and professional development guides. The website is **www.ciera.org**.

Southwest Educational Development Laboratory (SEDL)

This organization exists to bring findings from research to professionals who work to improve teaching and learning. It is funded through competitive grants and addresses research topics in many areas. The products include a wide range of resources specific to reading, including resource guides, searchable databases on assessments and instruction, and professional development resources. The website is **www.sedl.org/reading/**.

No Child Left Behind

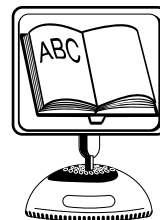
The No Child Left Behind Act website provides a variety of information about the legislation. It also is a source of facts on various topics including reading and assessment of student progress. The website is **www.nochildleftbehind.gov/**.

The U. S. Department of Education

This website covers the full range of topics under the auspices of the U.S. Department of Education. Of particular interest to teachers are the links to educational resources. The website is **www.ed.gov/index.jsp**.



Reading Programs That Use Scientifically Based Reading Research



The Florida Center for Reading Research

The FCRR, described on page 25, has established a review process to analyze reading curriculum and materials and evaluate how well the materials align to Reading First and current research in reading. The “FCRR Reports” provide factual information about the programs including a description of strengths and weaknesses, references, and links to the program website. Programs included in the report are those requested by Florida school districts. The reports are not intended to endorse, advertise, or provide official approval of the programs. The “FCRR Reports” can be accessed at www.fcrr.org/reports.htm.

The American Federation of Teachers

In 1999, the AFT produced a report that identified promising reading and language arts programs. The document *Building on the Best, Learning from What Works: Seven Promising Reading and Language Arts Programs* provides a summary of reading programs and the evidence upon which the program selection was made. This document is available from www.aft.org/edissues/whatworks/index.htm.

Institute for the Development of Educational Achievement

This federally funded project, described on page 26, provides a variety of information on effective reading instruction. Specifically related to selecting reading programs, readers may find *A Consumer’s Guide to Evaluating a Core Reading Program Grades K-3* helpful. The document is part of the BIG IDEAS in Beginning Reading section and can be downloaded at reading/uoregon.edu/big_ideas/au_programs.php/.

Reading Assessments

The Florida Center for Reading Research

The FCRR website has a section on assessment that provides general information, specific information designed to help Reading First schools implement their plans, and lists of assessments that meet high standards of reliability and validity. There are also several charts that list tests and describe the purpose and skills that are measured. This information can be located at www.fcrr.org/assessment.htm.

The Institute for the Development of Educational Achievement

The Institute provides a variety of resources about scientifically based reading research and classroom application. There are many resources related to reading assessment. Of particular interest is the *Analysis of Reading Assessment Instruments for K-3*. The analysis results can be sorted by type (screening, diagnosis, progress monitoring, and outcome), grade level, or reading component. The information is located at idea.uoregon.edu/assessment/index.html.

Specific Tests and Assessment Methods

Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

This is a screening and progress monitoring assessment of critical early pre-reading and reading skills. The test is based upon curriculum-based measurement procedures that make it easier to see discrete increments of improvement. This is particularly helpful with students who require frequent monitoring to determine progress. The DIBELS tests are very brief and can be administered by teachers to individual students. This assessment instrument is readily available in most Florida schools and is required to be used in Reading First schools. For more information about DIBELS visit www.dibels.uoregon.edu.

Fox in a Box: An Adventure in Literacy

This individual literacy assessment is for students levels K-3. It addresses phonological awareness, phonics, reading, oral expression, listening, writing, vocabulary, and fluency. It can be used for screening, diagnostic information, monitoring progress, and as an outcome assessment. For more information contact www.ctb.com/products/product_summary.jsp.



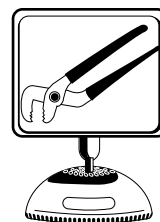
Informal Inventories

These assessments provide a method to gather general information to plan instruction, assess instructional activities, and monitor student progress. They include items like informal reading inventories, error analysis, and curriculum-based assessment. Curriculum-based assessment is particularly useful to teachers as a tool for monitoring instructional progress. It uses tests of performance that come directly from the curriculum. For example, a child may be asked to read passages from his or her reading book for one minute. The teacher can measure the accuracy and the speed of reading and compare the student's performance with his previous performance rather than with peers' performance. Such measures or probes are used periodically (monthly, quarterly) to monitor student progress. Because the assessment is directly tied to the curriculum content, it allows the teacher to match instruction to a student's current abilities and pinpoint areas where curriculum adaptations or modifications are needed. The results of curriculum-based assessment are useful to teachers in planning instruction and monitoring progress.



Curriculum-based assessment can be confused with curriculum-based measurement. The primary difference is that curriculum-based measurement has undergone procedures to establish reliability and validity, as well as standardized administration procedures such as DIBELS describe above. The results of curriculum-based measurement can be used as a formal assessment and allow comparisons among students.

One great resource on informal assessment information in reading is Cool Tools, produced by Project CENTRAL, funded by the Florida Department of Education. The Cool Tools document can be downloaded from reach.ucf.edu/~CENTRAL/frames.htm.



Diagnostic Assessments of Reading (DAR)

This assessment tool is designed to diagnose specific reading abilities in six areas: word analysis, oral reading, silent reading, comprehension, spelling, and word meaning. Individuals must be trained to administer the assessment and to interpret assessment results. Many Florida schools have individuals trained to administer this assessment. Contact your school administrator or district reading administrator for information on resources in your district.

Early Reading Diagnostic Assessment (ERDA)

This assessment is individually administered and is designed as a diagnostic tool to evaluate early reading skills of students from kindergarten to grade 3. Individuals must be trained to administer the assessment and to interpret assessment results. Many Florida schools have individuals trained to administer this assessment. Contact your school administrator or district reading administrator for information on resources in your district.

Training for Teachers to Improve Reading Instruction

Florida Online Reading Professional Development

FOR-PD is an online staff development project designed to help teachers improve reading instruction for students in grades pre-K through twelve. FOR-PD courses include intensive, current, interactive, effective, and efficient multimedia professional growth programs. The courses can be taken for inservice or graduate credit that will apply to reading certification requirements. For more information, visit the website at www.itrc.ucf.edu/forpd.



Project CENTRAL

Project CENTRAL is a project funded by the Florida Department of Education through IDEA to identify and disseminate information and training about research-based effective instructional practices for students with disabilities. The project coordinates training to maintain a cadre of trainers in identified practices that are available to schools throughout Florida. Several practices are linked to reading. They include phonological awareness, curriculum-based measurement, and administration and use of DIBELS. For more information about training available in your area contact Project CENTRAL at www.reach.ucf.edu/~CENTRAL/.

School District Professional Development

When districts select a new core reading instruction program, they provide specific training for teachers to understand how the program was designed and how to use the program effectively. Any reading program currently approved for the Florida Instructional Materials Adoption in Reading has demonstrated that it is based on scientifically based reading research and incorporates materials to meet the needs of all students, including those with disabilities. Contact your exceptional student education administrator or district reading program administrator to find out what is available in your school district.

Keeping Current about Findings from Research on Teaching Reading

Florida Center for Reading Research (FCRR)

The FCRR, described earlier, provides updates on research activities, “FCRR Reports” on instructional materials for reading, and information about Reading First activities in Florida. The website is **www.fcrr.org**.

What Works Clearinghouse

The U.S. Department of Education Institute of Education Sciences has developed this clearinghouse to provide an independent, trustworthy source of scientific evidence on what works in education. The Clearinghouse is currently in the first year of developing a series of “Evidence Reports”. Among the topics that will be available are “Interventions in Beginning Reading” and “Peer-Assisted Learning in Elementary Schools”. The website is **w-w-c.org**.



The Institute for the Development of Educational Achievement

The Institute for the Development of Educational Achievement, described above, updates assessment and instructional information regularly based upon review of scientific research. The website is **idea.uoregon.edu**.

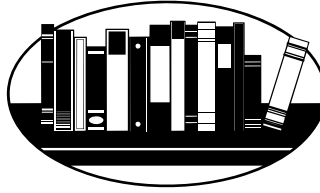
Partnership for Reading

The Partnership, described earlier, has established a mission to disseminate evidence-based research. The website provides a searchable research article database, links to important reading resources, and summaries of evidence-based reading instruction components. The website is **www.nifl.gov/partnershipforreading/index.html**.

Professional Organizations

Professional organizations provide an opportunity to interact with colleagues and researchers through professional journals, websites, professional development programs, and conferences. The Council for Exceptional Children (CEC) has targeted reading as a primary concern. CEC offers professional development activities and produces documents about reading for students with disabilities. The CEC website is **www.cec.sped.org**.

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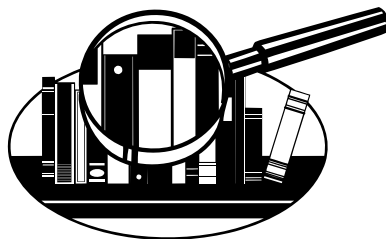
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